Claim Amendments:

Claims 1-23 (canceled)

24. (new) A communication system comprising:

a first communication device including,

a digital signal source;

an analog signal source;

an analog to digital converter coupled to the analog signal source;

a quadrature amplitude modulation unit coupled to the digital signal source and the analog to digital converter;

a first pulse shaping filter coupled to the quadrature amplitude modulation unit,

the first pulse shaping filter being characterized in that the frequency domain response mets the Nyquist criteria and that the square root of the frequency domain response has a first derivative that is continuous at all points, the pulse shaping filter having an impulse response corresponding to the square root of the frequency domain response;

a modulator coupled to receive a signal from the pulse shaping filter; and

a transmitter coupled to the modulator; and

a second communication device including

a receiver;

a demodulator coupled to the receiver;

a second pulse shaping filter, the second pulse shaping filter being matched to the first pulse shaping filter and being characterized in that the frequency domain response mets the Nyquist criteria and that the square root of the frequency domain response has a first derivative that is continuous at all points, the pulse shaping filter having an impulse response corresponding to the square root of the frequency domain response;

a quadrature amplitude demodulation unit coupled to the second pulse shaping filter; and

a signal ouput coupled to the quadrature amplitude demodulation unit.

25. (new) The communication system of claim 24 wherein the first communication device is a base unit and the second communication device is a terminal unit.

26. (new) The communication system of claim 24 wherein the transmitter broadcasts signals at radio frequency.

27. (new) The communication system of claim 24 wherein the frequency domain response NF(ω), is represented by the following equations:

$$NF(\omega) = T, \text{ when } |\omega| \le \frac{\pi}{T}(1-\alpha)$$

$$NF(\omega) = \frac{T}{2}\left(1-\sin\left\{\frac{\pi}{2}\sin\left[\frac{T}{2\alpha}\left(|\omega|-\frac{\pi}{T}\right)\right]\right\}\right), \text{ when } \frac{\pi}{T}(1-\alpha) \le |\omega| \le \frac{\pi}{T}(1+\alpha)$$

$$NF(\omega) = 0, \text{ when } \frac{\pi}{T}(1+\alpha) \le |\omega|$$

wherein ω is frequency, T is a time period between symbols, and α is a roll-off factor.